

## REMARKS

Claims 26-43, 46-55, and 97-100 are pending in the application, with no claims being currently amended.

In the Official Action, claims 26-35, 41-43, 97, and 98 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Van Ooij WO 00/63462 ("the '462 application"), Van Ooij U.S. Patent No. 6,416,869 ("the '869 patent"), or Van Ooij U.S. Patent No. 6,756,079 ("the '079 patent")<sup>1</sup> in view of Pines U.S. Patent No. 3,088,847 ("Pines").

Whereas, claims 36-40, 46-55, 99, and 100 stand rejected over the '462 application, the '869 patent, or the '079 patent in view of Pines and further in view of Shimakura U.S. Patent No. 6,475,300, ("Shimakura"). In addition, claims 26-35, 41-43, 97, and 98 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 7-19, 24-31, and 33 of the '079 patent in view of Pines.

Whereas, claims 36-40, 46-55, 99, and 100 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 7-19, 24-31, and 33 of the '079 patent in view of Pines and further in view of Shimakura.

Examiner continues to recognize in the Official Action that the '462 application, the '869 patent, and the '079 patent fail to explicitly disclose a coating thickness in the range

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<sup>1</sup> Applicants submit that a rejection over a single Van Ooij reference is more than sufficient in this case insofar as the §103 rejections based on each of the three Van Ooij references are clearly duplicative. To that end, Applicants kindly request Examiner to refrain from piecemeal examination, in particular, undue multiplication of references which is warned against in MPEP §§ 707.07(g) and 904.03. Specifically, "in selecting the references to be cited, the examiner should carefully compare the references with one another and with the applicant's *disclosure* to avoid the citation of an unnecessary number. The examiner is not called upon to cite *all* references that may be available, but only the "best." Multiplying references, any one of which is as good as, but no better than, the others, adds to the burden and cost of prosecution and should therefore be avoided." MPEP §904.0.3.

from about 0.1  $\mu\text{m}$  to about 1  $\mu\text{m}$ , as required by independent claims 26 and 46, and from about 0.2  $\mu\text{m}$  to about 0.6  $\mu\text{m}$ , as required by dependent claims 42 and 55. However, to support his non-obviousness rejection, Examiner now relies on Pines to fill the teaching void of those references. In reliance thereon, Examiner states that Pines discloses a "similar method, wherein aminoalkyl-alkoxy silanes are applied to a metal substrate as a primer layer" with a polymeric material, including rubber, applied on top of that primer layer. The coating thicknesses of the primer layer disclosed in Pine are alleged by Examiner to overlap with both of the instantly claimed ranges, i.e., from about 0.1  $\mu\text{m}$  to about 1  $\mu\text{m}$  (and from about 0.2  $\mu\text{m}$  to about 0.6  $\mu\text{m}$ ). In view thereof, Examiner asserts that it would have been obvious to one of ordinary skill in the art to use a coating thickness of from about 0.1  $\mu\text{m}$  to about 1  $\mu\text{m}$  or from about 0.2  $\mu\text{m}$  to about 0.6  $\mu\text{m}$ , as allegedly taught by Pines, in the method of the Van Ooij references, because Pines discloses a similar method of using an aminoalkyl-alkoxy silanes to bond rubber to metal, wherein film thicknesses ranging from 0.01 to 0.10 mil (0.254  $\mu\text{m}$  – 2.54  $\mu\text{m}$ ) are preferred. *See* Official Action, Pages 5-6, for example. Applicants respectfully disagree and submit that all of the rejections are in error for the reasons that follow.

Applicants' independent claims 26 and 46 recite methods of bonding rubber to a metal substrate, which call for applying a silane solution comprising a substantially hydrolyzed amino-silane and a substantially hydrolyzed sulfur-containing silane to at least a portion of a surface of a metal substrate [underlining for emphasis].

It is understood that if there is a suggestion, teaching, or motivation to combine prior art references flowing from the references, and the results are expected, then the invention is obvious

and not patentable. *KRS Int'l. Co. v. Teleflex, Inc.*, 550 U.S.\_\_\_\_, 127 S.Ct. 1727, 1739 (2007). There is clearly no such teaching in the cited references.

In particular, upon review of Pines, Pines fails to disclose applying a substantially hydrolyzed amino-silane and a substantially hydrolyzed sulfur-containing silane to a metal substrate, as required by independent claims 26 and 46 [underlining for emphasis]. In fact, Pines fails to even mention a sulfur-containing silane let alone one that is substantially hydrolyzed and further in combination with a substantially hydrolyzed amino-silane [underlining for emphasis]. To that end (and regardless of the failure of Pine to disclose a substantially hydrolyzed amino-silane), how can Pines disclose a similar method to Applicants' claimed method when Pines fails to make mention of a sulfur-containing silane, which is a critical silane solution component? It cannot. Indeed, the presence of the sulfur-silane component changes the characteristics of the silane solution.<sup>2</sup> Thus, without an analogous silane solution, it simply cannot be obvious to one of ordinary skill in the art to look to Pines in an effort to provide an optimized coating thickness, e.g., about 0.1  $\mu\text{m}$  to about 1  $\mu\text{m}$ , in the process of the '462 application, the '869 patent, or the '079 patent.<sup>3</sup> Therefore, the rejections of the claims as obvious are in error and should be withdrawn.

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<sup>2</sup> For example, as discussed in the '462 application at page 15, lines 15-19, "[a] coating applied from a solution of a hydrolyzed bis-silyl aminosilane alone provides no adhesion to sulfur-cured rubber. Yet, when a solution comprising the same bis-silyl aminosilane and a hydrolyzed bis-silyl polysulfur silane is used, the resulting adhesion exceeds that provided by the bis-silyl polysulfur silane alone."

<sup>3</sup> It is worth noting that the Pines silane solution further fails to disclose Applicant's bis-amino silanes [underlining for emphasis], as required by dependent claims 30 and 48. Rather, Pine appears to disclose only mono-amino silanes, not bis amino silanes.

In addition, because Pines fails to provide the requisite teachings to maintain Examiner's 103 obviousness rejections, the additional rejections based further on the combination of Shimakura must also fall. Regardless, Applicants submit that Shimakura simply fails to provide any discussion of bonding rubber to metal, as is required by independent claims 26 and 46. Rather, Shimakura concerns itself with bonding top coats, i.e. paint (NOT rubber), to metal substrates such as via a nonchromate primer coating (not a silane solution). *See, e.g.*, abstract; col. 2, lines 46-67; col. 5, lines 51-58; col. 6, lines 5-14 and 39-46, and the Examples. In contrast, Applicants' method specifically requires bonding rubber to metal. Because Shimakura teaches non-rubber to metal bonding, what motivation or suggestion is there to combine the teachings of this reference with the rubber bonding of the '462 application, the '869 patent, or the '079 patent and Pines to provide Applicants' claimed methods of bonding rubber to metal? There is none.

Accordingly, in view of the above, it is respectfully submitted that the rejections of independent claims 26 and 46 as obvious are in error and should be withdrawn. In addition, the rejection of dependant claims 27-43, 47-55, and 97-100 are also in error and should be withdrawn.

Finally, as stated above, Examiner now maintains rejection of all pending claims based on non-statutory obviousness-type double patenting. In particular, claims 26-35, 41-43, 97, and 98 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 7-19, 24-31, and 33 of the '079 patent in view of Pines. Whereas, claims 36-40, 46-55, 99, and 100 are rejected on the grounds

of nonstatutory obviousness-type double patenting as being unpatentable over the combined limitations of claims 7-19, 24-31, and 33 of the '079 patent in view of Pines and further in view of Shimakura.

A double patenting rejection of the obviousness-type, if not based on an anticipation rationale, is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Therefore, the analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). As can be plainly seen from a reading of the Official Action, Examiner has generally regurgitated the obviousness arguments based on the '079 patent in view of Pines and also further in view of Shimakura and relabeled them as obviousness-type double patenting rejections. These relabeled rejections are equally as flawed as Examiner's obviousness rejections for the reasons stated above. Thus, it is submitted that Applicant's methods are not an obvious variation of any of claims 7-19, 24-31, and 33 of the '079 patent in view of Pines and further in view of Shimakura. Accordingly, Applicants respectfully submit that the rejections based on non-statutory obviousness-type double patenting are in error and must be withdrawn.

### Conclusion

As a result of the remarks given herein, Applicants submit that the rejections of the pending claims have been overcome. Therefore, Applicant respectfully submits that this case is in condition for allowance and requests allowance of the pending claims.

If this Response leaves any issues open or the Examiner wishes to discuss any further issues, a call to undersigned counsel would be gratefully appreciated. Applicants also have submitted all fees believed to be necessary herewith. Should any additional fees or surcharges be deemed necessary, the Examiner has authorization to charge fees or credit any overpayment to Deposit Account No. 23-3000.

Respectfully submitted,  
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